

WHAT IS CLAIMED IS:

1. An exhaust-gas cleaning system, comprising:
a nitrogen oxide reduction catalytic converter for
reducing nitrogen oxides contained in an exhaust gas;
5 a reducing-agent metering device for metered addition of
the reducing agent or a reducing-agent precursor to the
exhaust gas,

wherein said reducing-agent metering device comprises:

a feed unit;
10 a vaporizer arranged upstream of the
nitrogen oxide reduction catalytic converter; and
a heat source selected from the group consisting of a
heatable deflector surface onto which the reducing agent is
directed under pressure and a microwave generator.

15 2. An exhaust-gas cleaning system according to
Claim 1, wherein the heatable deflector surface comprises a
baffle plate that is oriented parallel to a direction of flow of
the exhaust gas.

20 3. An exhaust-gas cleaning system according to
Claim 2, wherein a surface of the baffle plate is arranged
against an inside surface of a pipe of the exhaust-gas cleaning
system or is arranged in an interior of the pipe.

25 4. An exhaust-gas cleaning system according to Claim 2,
wherein the heatable baffle plate is arranged in a part-flow
branch line of the exhaust-gas cleaning system that branches off
from a main-flow exhaust system section at a branching point and
30 opens back into the main-flow exhaust system section downstream
of the branching point.

5. An exhaust-gas cleaning system according to Claim 1, further comprising two catalytic converter stages connected in series, wherein each catalytic converter stage has a different reducing-agent storage capacity and wherein at least one of the catalytic converter stages forms the nitrogen oxide reduction catalytic converter.

6. A motor vehicle internal combustion engine comprising the exhaust-gas cleaning system according to Claim 1.

7. A method for cleaning exhaust gas, comprising:
guiding an exhaust gas containing nitrogen oxides through a main flow channel;
injecting a reducing agent into the exhaust gas;
vaporizing the reducing agent;
mixing the vaporized reducing agent and the exhaust gas;
catalytically reducing the nitrogen oxides,
wherein said vaporizing comprises heating the reducing agent by microwave radiation or by spraying the reducing agent onto a heated deflector surface.

8. A method according to Claim 7, wherein said vaporizing further comprises hydrolysing urea to form gaseous ammonia and carbon monoxide.

9. A method according to Claim 7, wherein said heated deflector surface further comprises a catalytically active coating.